

## Soft Recovery Ultrafast Plastic Rectifier


**DO-201AD**

### FEATURES

- Glass passivated chip junction
- Ultrafast reverse recovery time
- Low forward voltage drop
- Low leakage current
- Low switching losses, high efficiency
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC


**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and telecommunication.

### MECHANICAL DATA

**Case:** DO-201AD

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS compliant, commercial grade

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

**Polarity:** Color band denotes cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	3.5 A
$V_{RRM}$	50 V to 200 V
$I_{FSM}$	90 A
$t_{rr}$	20 ns
$V_F$	0.89 V
$T_J \text{ max.}$	150 °C

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)						
PARAMETER	SYMBOL	SBYV28-50	SBYV28-100	SBYV28-150	SBYV28-200	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	150	200	V
Maximum RMS voltage	$V_{RMS}$	35	70	105	140	V
Maximum DC blocking voltage	$V_{DC}$	50	100	150	200	V
Minimum reverse breakdown voltage at 100 $\mu$ A	$V_{BR}$	55	110	165	220	V
Maximum average forward rectified current 0.375" (9.5 mm) lead lengths at $T_L = 85\text{ °C}$	$I_{F(AV)}$	3.5				A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	90				A
Operating and storage temperature range	$T_J, T_{STG}$	- 55 to + 150				°C

ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	SBYV28-50	SBYV28-100	SBYV28-150	SBYV28-200	UNIT
Maximum instantaneous forward voltage	3.5 A	T <sub>J</sub> = 25 °C	V <sub>F</sub> <sup>(1)</sup>	1.1				V
		T <sub>J</sub> = 150 °C		0.89				
Maximum DC reverse current at rated DC blocking voltage			I <sub>R</sub>	5.0				μA
				300				
Maximum reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A	T <sub>J</sub> = 25 °C	t <sub>rr</sub>	20				ns
Typical junction capacitance	4.0 V, 1 MHz		C <sub>J</sub>	20				pF

**Note**

(1) Pulse test: t<sub>p</sub> = 300 μs pulse, duty cycle ≤ 2 %

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	SBYV28-50	SBYV28-100	SBYV28-150	SBYV28-200	UNIT	
Typical thermal resistance	R <sub>θJA</sub> <sup>(1)</sup>	25					°C/W

**Note**

(1) Lead length = 3/8" on P.C.B. with 1.5" x 1.5" (38.1 mm x 38.1 mm) copper surface

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SBYV28-200-E3/54	1.138	54	1400	13" diameter paper tape and reel
SBYV28-200-E3/73	1.138	73	1000	Ammo pack packaging

## RATINGS AND CHARACTERISTICS CURVES

(T<sub>A</sub> = 25 °C unless otherwise noted)

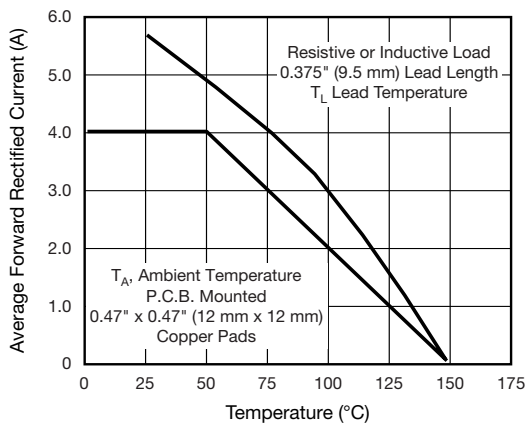


Fig. 1 - Forward Current Derating Curves

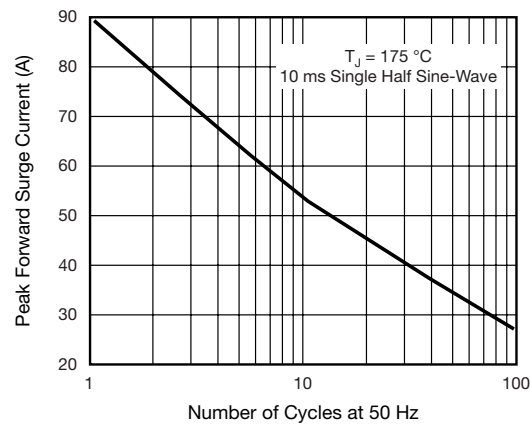


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

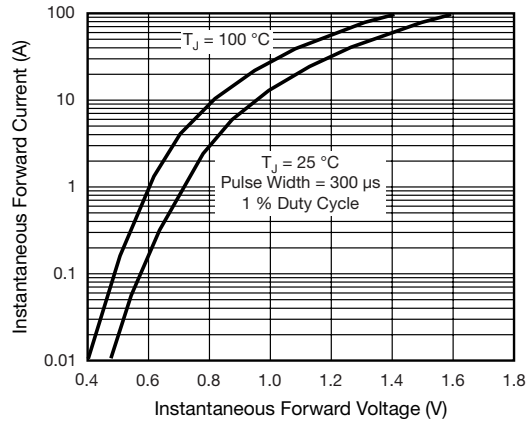


Fig. 3 - Typical Instantaneous Forward Characteristics

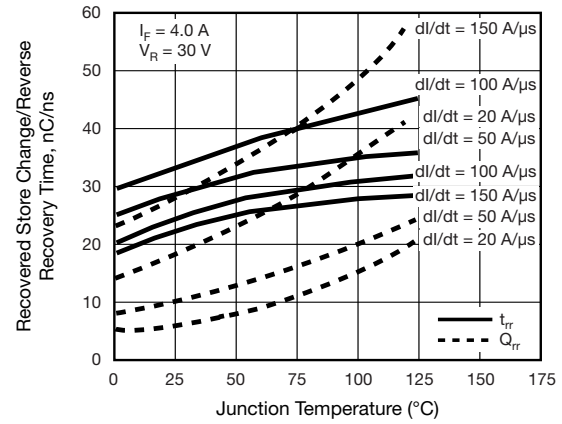


Fig. 5 - Reverse Switching Characteristics

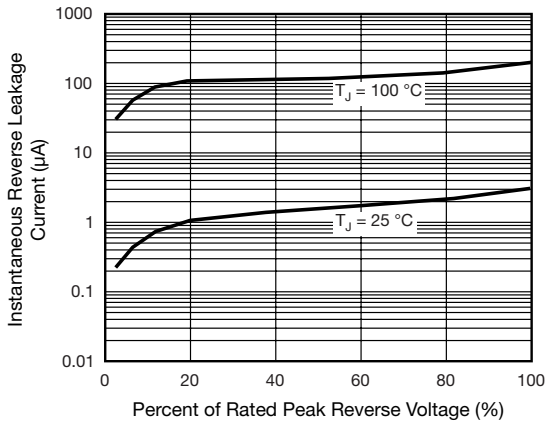


Fig. 4 - Typical Reverse Leakage Characteristics

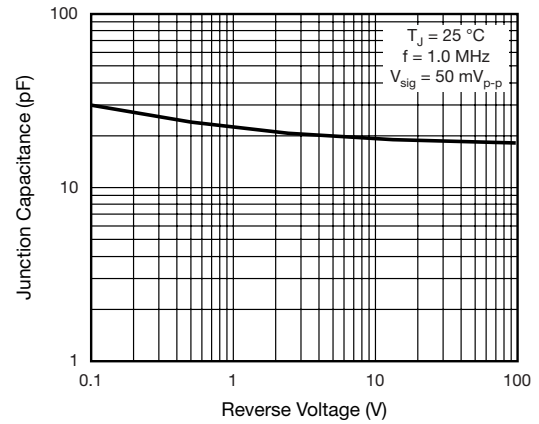
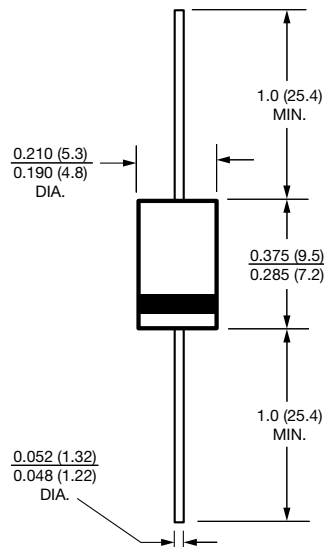


Fig. 6 - Typical Junction Capacitance

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

#### DO-201AD





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